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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte EMILE DI SERIO

Appeal 2008-1790
Application 10/035,018
Technology Center 3700

Decided:¹ March 4, 2009

Before: JENNIFER D. BAHR, STEVEN D.A. McCARTHY
and MICHAEL W. O'NEILL, *Administrative Patent Judges.*

McCARTHY, *Administrative Patent Judge.*

DECISION ON APPEAL

¹ The two-month time period for filing a response, as recited in 37 C.F.R. § 41.50(b) (2007) begins to run from the Decided Date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

STATEMENT OF THE CASE

The Appellant appeals under 35 U.S.C. § 134 (2002) from the final rejection of claims 1 and 3 under 35 U.S.C. § 103(a) (2002) as being unpatentable over Mikito² (JP 07-195136, publ. Aug. 1, 1995), admitted prior art,³ and Hiroshi⁴ (JP 05-146841, publ. Jun. 15, 1993); and from the final rejection of claims 2 and 4 under 35 U.S.C. § 102(b) (2002) as being anticipated by Mikito. We have jurisdiction under 35 U.S.C. § 6(b) (2002).

We REVERSE the rejections of claims 1-4. Pursuant to 37 C.F.R. § 41.50(b) (2008), we enter NEW GROUNDS against claims 2 and 4 under 35 U.S.C. § 112, ¶ 2 (2002) as being indefinite for failing to particularly

² All references in this opinion to “Mikito” will be to a translation of JP-07-195136 prepared in March 2008 and made of record in this Appeal. The named inventor on JP 07-195136 is translated at various points in the record as “Mikito” and “Mikihito.” Both the Appellant and the Examiner have used the name “Mikito.” For purposes of consistency, the reference will be referred to as “Mikito” in this opinion.

³ The Examiner refers in the rejection to admitted prior art at page 4, lines 10 to 19, of the Appellant’s Specification. This portion of the Specification is reproduced below:

This part is intended to be obtained according to the COBAPRESS method described in European patent No. 119 365 that implements successive foundry- casting then forging operations for light alloy parts, such as aluminum alloy parts. An intermediary operation is included between the casting and forging operations in which the part in the foundry preformed condition is introduced into a tunnel furnace that heats and ensures a uniform temperature of said part before it is transferred to the forging station.

⁴ All references in this opinion to “Hiroshi” will be to a translation of JP 05-146841 prepared in February 2008 and made of record in this Appeal.

1 point out and distinctly claim the subject matter which the Appellant regards
2 as the invention.

3 Independent claim 1 recites a method for manufacturing parts that are
4 molded then forged. The parts comprise one or more recesses. The method
5 includes the steps or “phases” of creating a foundry preform; transferring the
6 foundry preform to a tunnel furnace that ensures a uniform temperature of
7 the preform; introducing at least one multidirectional rod into at least one of
8 a recess and a cavity of the foundry preform; and performing a heading⁵
9 operation on the preform when the at least one rod is temporarily positioned
10 inside the at least one recess or cavity. The method further includes
11 “substantially maintaining by the at least one rod at least one shape of the
12 one or more shapes of the at least one of a recess and a cavity during the
13 heading operation.”

14 Claim 2 recites:

15
16 2. Installation to implement the method
17 of claim 1 wherein the control means comprises
18 one or more multidirectional rod translation
19 mechanisms positioned around the heading die
20 receiving the foundry preform, said at least one rod
21 being positioned temporarily in the foundry
22 preform through the corresponding at least one of a
23 recess and a cavity in order to be subjected to the
24 forging operation.
25

⁵ The Appellant’s Specification defines a heading operation as “a cold working process wherein the material is squeezed into a die and finished parts assume the shape of the die.” (Spec. 3).

ISSUES

The Appellant does not argue the rejection of claim 3 separately from the rejection of claim 1. (App. Br. 8; Reply Br. 2). Mikito discloses a method including a forging process for molding a light metal product having lateral holes or cavities. (Mikito 10, ¶ 0015 and 17, ¶ 0028). In rejecting claim 1, the Examiner finds that Mikito discloses inset molds 63, 64 serve to substantially maintain the shape of the cavities 51, 52 during the forging process. The Examiner further relies on Hiroshi for a suggestion to provide a preform forged product having cavities with insert rod elements during a heading/forging step in order to substantially maintain the cavity shape. (Ans. 5). The Appellant's contentions regarding the rejection of claims 1 and 3 turn on one issue:

Has the Appellant shown that the Examiner failed to articulate reasoning with some rational underpinning to support the conclusion that Mikito and Hiroshi would have suggested introducing a rod into a recess or a cavity of the foundry preform and substantially maintaining by the rod the shape of the recess or cavity during a heading operation?

(See App. Br. 7; Reply Br. 5-6).

The Appellant contends that claims 2 and 4 depend from claim 1. The Appellant further contends that claims 2 and 4 are not anticipated by Mikito under § 102(b) for the same reasons which the Appellant directs against the rejection of claims 1 and 3 under § 103(a). (App. Br. 8). In addition the Appellant contends that Mikito does not disclose one or more multidirectional rod translation mechanisms positioned around the heading die receiving the foundry preform as recited in claim 2 or a cylinder-type

control means as recited in claim 4. (App. Br. 8-9). Before the issue of whether the Examiner erred in rejecting claims 2 and 4 under § 102(b) may be reached, however, the threshold issue of definiteness must be addressed:

Are claims 2 and 4 unreasonably ambiguous?

FINDINGS OF FACT

The record supports the following findings of fact (“FF”) by a preponderance of the evidence.

1. Mikito discloses casting a preparatory molding having a shape similar to that of the target product. The preparatory molding has one or more lateral holes larger than the lateral holes to be formed in the target product. (Mikito 14-15, ¶ 0023 and 16, ¶ 0027).

2. Mikito discloses sufficiently heating the preparatory molding to a temperature in the range where the liquid phase and the solid phase of the metal from which the preparatory molding is made coexist. (Mikito 15, ¶ 0025 and 17, ¶ 0028).

3. Mikito discloses setting the preparatory molding between the dies of a secondary mold. (Mikito 14-15, ¶ 0024; Figs. 6-7; 16, ¶ 0027; and Fig. 8).

4. Mikito discloses inserting inset molds in the one or more lateral holes. (Mikito 15, ¶¶ 0024-25 and 16-17, ¶¶ 0027-28). Fig. 6 of Mikito shows an inset mold having the shape of a rod whereas Fig. 8 shows inset molds having the shape of enlarged heads formed at the ends of rods. Mikito discloses setting an inset mold in a lateral hole of a preparatory molding by means of a hydraulic cylinder. (Mikito 15, ¶ 0024).

5. Mikito discloses driving a pressing mold into the secondary mold to form the target product. (Mikito 15, ¶¶ 0024-25 and 17, ¶ 0028). As the pressing mold is driven into the secondary mold, the metal fills uniformly around the inset mold. (Mikito 11, ¶ 0016).

6. Mikito discloses that slowly pressing a preparatory molding heated to a semi-solidified state to form the target product improves the crystalline structure of the target product while creating no forces which act to deform the inset molds. (Mikito 11, ¶ 0016; 12, ¶ 0019; and 17, ¶ 0029).

7. Hiroshi discloses a method in which metal is cast in a shape close to that of a target product and then forged. (Hiroshi 2, ¶ 0002).

8. Hiroshi discloses casting the metal around the intermediate parts. (Hiroshi 7, ¶ 0013). The intermediate parts are formed from alloy tool steel coated with a separating agent of black lead. (Hiroshi 6, ¶ 0012).

9. Hiroshi discloses forging the metal casting to form the target product. (Hiroshi 7, ¶ 0015).

10. Hiroshi discloses that the intermediate part may be re-used due to excellent heat resistance and durability. (*Id.*)

PRINCIPLES OF LAW

A claim under examination is given its broadest reasonable interpretation consistent with the underlying specification. *In re American Acad. of Science Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). In the absence of an express definition of a claim term in the specification, the claim term is given its broadest reasonable meaning in its ordinary usage as the term would be understood by one of ordinary skill in the art. *In re ICON*

1 *Health & Fitness, Inc.*, 496 F.3d 1374, 1379 (Fed. Cir. 2007); *In re Morris*,
2 127 F.3d 1048, 1054 (Fed. Cir. 1997).

3 The language of a claim satisfies § 112, ¶ 2 only if “one skilled in the
4 art would understand the bounds of the claim when read in light of the
5 specification.” *Exxon Research & Eng’g Co. v. United States*, 265 F.3d
6 1371, 1375 (Fed. Cir. 2001). A claim is indefinite if the language of the
7 claim is susceptible of no reasonable interpretation. *Id.* A claim under
8 examination susceptible of more than one reasonable interpretation may be
9 indefinite if the scope of the claim differs significantly depending on which
10 of the reasonable interpretations one adopts. *Ex Parte Miyazaki*, 89
11 USPQ2d 1208, 1211-12 (BPAI 2008).

12 “To anticipate a claim, a prior art reference must disclose every
13 limitation of the claimed invention, either explicitly or inherently.” *In re*
14 *Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997). A determination
15 concerning anticipation cannot be based on unsupported speculative
16 assumptions concerning the meaning of the claim at issue, however.
17 Reversal of a rejection under § 102(b) may be appropriate if the claim is
18 indefinite. *In re Steele*, 305 F.2d 859, 863 (CCPA 1962).

19 The Appellant’s burden in this appeal with respect to the rejections of
20 claims 1 and 3 is to show that the Examiner has failed to identify sufficient
21 evidence to support a conclusion of prima facie obviousness. *In re Kahn*,
22 441 F.3d 977, 985-86 (Fed. Cir. 2006)(citing *In re Rouffet*, 149 F.3d 1350,
23 1355 (Fed. Cir. 1998)). “[T]he simple substitution of one known element for
24 another” or “the mere application of a known technique to a piece of prior
25 art ready for the improvement” generally will be obvious unless the
26 substitution or the application of the known technique would have been

beyond the level of ordinary skill in the art; or the results of the substitution or the application of the known technique would not have been predictable by one of ordinary skill in the art. *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, ___, 127 S. Ct. 1727, 1740 (2007). On the other hand, “rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *Kahn*, 441 F.3d at 988.

ANALYSIS

The Examiner considers the question of whether to reform the shapes of the cavities in a preparatory molding as disclosed by Mikito or to maintain the shapes of the cavities as disclosed by Hiroshi is “an obvious exercise of mechanical design depending on the complexity and location of the cavity profile desired in the product.” (Ans. 4). The Examiner further reasons that:

Hiroshi’s use of [an] insert 50 which allows the shape of cavities 22 and 24 to substantially remain unchanged during a forging step is an improvement over the prior art in that it allows for [an] easy, inexpensive forging process of a metallic part having a complex shape without a reduction in strength

(Ans. 8).

Mikito discloses casting a preparatory molding having one or more lateral holes larger than the lateral holes to be formed in the target product. (FF 1). During Mikito’s forging process, the metal fills uniformly around

1 the inset molds. (FF 5). Mikito's inset molds do not substantially maintain
2 the shapes of the lateral holes during the forging operation. Instead, Mikito
3 discloses a technique in which pressure slowly applied to a preparatory
4 molding pre-heated to a semi-solidified state promotes not only Mikito's
5 overall goals such as improving the grain structure of the target product but
6 also preserve the inset molds from deformation by creating no forces which
7 act to deform the inset molds. (FF 6). By way of contrast, Hiroshi discloses
8 making intermediate parts used to form the recesses in the target part from a
9 durable metal such as alloy tool steel so that the intermediate parts may be
10 re-used after the target product is forged. (FF 10).

11 This distinction implies that the Appellant is correct (*see* Reply Br. 3)
12 in asserting that Mikito and Hiroshi disclose entirely different methods. The
13 choice of whether to reform the shapes of the cavities in a preparatory
14 molding as disclosed by Mikito or to maintain the shapes of the cavities as
15 disclosed by Hiroshi would not have been an obvious exercise of mechanical
16 design depending on the complexity and location of the cavity profile
17 desired in the product. Any modification of Mikito's method in view of
18 Hiroshi so as to substantially maintain the shape of a lateral hole in the
19 preparatory molding during Mikito's forging process would have been
20 contrary to the principles on which Mikito's process operates. Likewise, the
21 teachings of Mikito and Hiroshi do not suggest how the insertion of inset
22 molds which substantially maintain the shapes of the lateral holes of a
23 preparatory molding would be an improvement for which Mikito's method
24 is ready. The Examiner provides no reasoning with some rational
25 underpinning which would close this gap so as to support a conclusion that
26 the subject matter of claims 1 and 3 would have been obvious. The

1 Examiner does not point to any teaching in the admitted prior art that would
2 remedy this deficiency in the combination of Mikito and Hiroshi.

3 The scope of claims 2 and 4 is indefinite. There are two reasons for
4 this. First, claims 2 and 4 recite “installations.” The word “installation”
5 does not appear in the Appellant’s Specification. The ordinary usage of
6 “installation” is sufficiently broad to include “something that is installed for
7 use.” WEBSTER’S THIRD NEW INT’L DICTIONARY at 1171 (G&C Merriam
8 Co. 1971)(“installation,” def. 2). Therefore, claims 2 and 4 recite structures
9 or apparatuses. Claims 2 and 4 each also recite the method step of one rod
10 being positioned temporarily in a foundry preform. Therefore, it is unclear
11 whether infringement of claims 2 and 4 would occur when one installed an
12 installation allowing a user to implement the method of claim 1 or when the
13 user actually used the installation to position a rod temporarily in a foundry
14 preform. As such, claims 2 and 4 do not apprise a person of ordinary skill in
15 the art of their scope so as to meet the requirements of § 112, ¶ 2. *See IPXL*
16 *Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d 1377, 1384 (Fed. Cir. 2005).

17 Second, the word “installation” itself does not expressly or inherently
18 limit the scope of the claimed structure. Claims 2 and 4 themselves define
19 the “installation” almost entirely in terms of function, namely, “to
20 implement the method of claim 1” The manner in which claims 2 and 4
21 recite this function is ambiguous.

22 The ordinary usage of the verb “implement” is sufficiently broad to
23 include either “to carry out, . . . *esp.* to give practical effect to and ensure of
24 actual fulfillment by concrete measures” or “to provide instruments . . . for.”
25 WEBSTER’S THIRD NEW INT’L DICTIONARY at 1135 (“implement,” defs. 1a
26 and 1b). Therefore, it is unclear from the language of claims 2 and 4

whether the recited “installation” need actually perform the entire method of claim 1 or instead might merely be an instrument or tool installed in some fashion which by virtue of usefulness in performing one or more steps of the method might give practical effect to the method. For example, it is unclear whether a forging apparatus installed in a factory would constitute itself an “installation to implement the method of claim 1” or whether an “[i]nallation to implement the method of claim 1” must include a foundry, a forging apparatus and a tunnel furnace for performing all of the steps recited in claim 1. The Appellant has identified no description in the Specification which might clarify what type of apparatus or even how much apparatus might be required “to implement the method of claim 1.” The language of claims 2 and 4 does not suffice to permit one skilled in the art would to understand the bounds of the claims when read in light of the Specification.

CONCLUSIONS

The Appellant has shown that the Examiner failed to articulate reasoning with some rational underpinning to support the conclusion that Mikito and Hiroshi would not have suggested introducing a rod into a recess or a cavity of the foundry preform and substantially maintaining by the rod the shape of the recess or cavity during a heading operation. Therefore, the Appellant has shown that the Examiner erred in rejecting claims 1 and 3 under § 103(a) as being unpatentable over Mikito and Hiroshi.

Claims 2 and 4 are ambiguous. Therefore, we enter new grounds of rejection against claims 2 and 4 under § 112, ¶ 2 as being indefinite for

1 failing to particular point out and distinctly claim the subject matter which
2 the Appellant regards as the invention.

3 Since claims 2 and 4 are unreasonably ambiguous, the Examiner's
4 rejection of claims 2 and 4 under § 102(b) as being anticipated by Mikito is
5 based on unsupported speculative assumptions concerning the meaning of
6 the claims. We reverse the rejection of claims 2 and 4 under § 102(b) as
7 being anticipated by Mikito.

8
9 **DECISION**

10 We REVERSE the Examiner's decision to reject claims 1-4.

11 We enter a NEW GROUND OF REJECTION against claims 2 and 4.

12 Under 37 C.F.R. § 41.50(b) a new ground of rejection has been
13 entered. 37 C.F.R. § 41.50(b) provides that, "[a] new ground of rejection
14 pursuant to this paragraph shall not be considered final for judicial review."

15 Regarding the new ground of rejection, Appellant must, *WITHIN*
16 *TWO MONTHS FROM THE DATE OF THE DECISION*, exercise one of the
17 following options with respect to the new ground of rejection, in order to
18 avoid termination of the appeal as to the rejected claims:

19 (1) *Reopen prosecution*. Submit an appropriate
20 amendment of the claims so rejected or new
21 evidence relating to the claims so rejected, or both,
22 and have the matter reconsidered by the examiner,
23 in which event the proceeding will be remanded to
24 the examiner. . . . [; or]

25
26 (2) *Request rehearing*. Request that the
27 proceeding be reheard under § 41.52 by the Board
28 upon the same record. . . .
29

1 No time period for taking any subsequent action in connection with
2 this appeal may be extended under 37 C.F.R. § 1.136(a) (2007).

3
4 REVERSED; 37 C.F.R. § 41.50(b)
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